The CRUSHED STONE JOURNAL

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The Vital Need for Scrap Steel

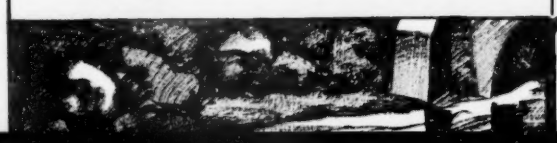
WPB Organizes Campaign for Scrap Collection

Federal Works Agency Announces Post-War Highway Building Program

What Can I Do?

July—October · 1942

Official Publication
NATIONAL CRUSHED STONE ASSOCIATION



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The Crushed Stone Journal

Official Publication of the NATIONAL CRUSHED STONE ASSOCIATION

J. R. BOYD, Editor

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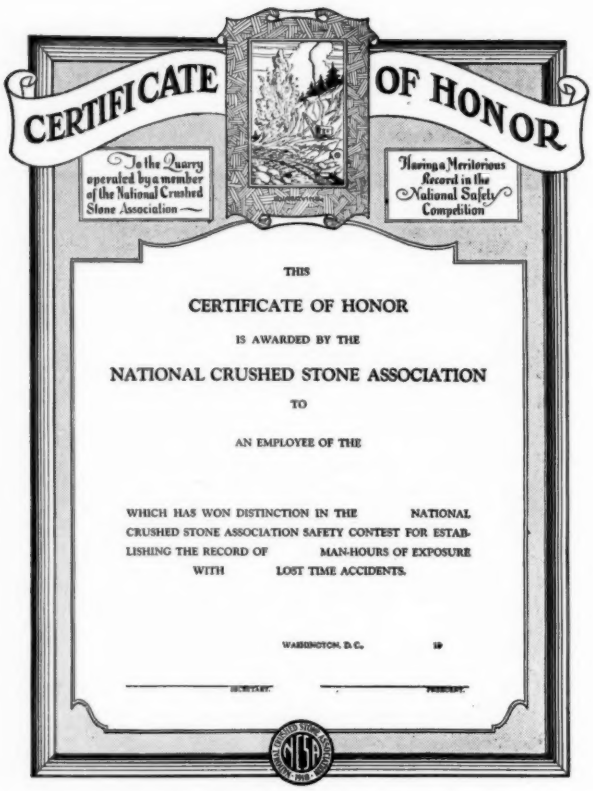
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In the Quarry operated by a member of the National Crushed Stone Association
Having a Meritorious Record in the National Safety Competition
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WASHINGTON, D.C.

THIS Certificate of Honor will be presented to each employee of each plant which completed the year 1941 with no lost time accidents.

THE
CRUSHED STONE JOURNAL
WASHINGTON, D. C.

Vol. XVII No. 4 JULY-OCTOBER, 1942

The National Crushed Stone Association Safety Competition of 1941

By T. D. LAWRENCE and
J. E. ISAACSON

Under supervision of W. W. Adams,
Mineral Production and Economics Division,
U. S. Bureau of Mines.

• Valmeyer Plant of Columbia Quarry Company wins N. C. S. A. Safety Contest. Honorable mention given to 20 plants for accident free record.

A SLIGHT reduction in the accident-frequency rate among men employed in quarrying and crushing stone was revealed for the year 1941 compared with 1940 by reports from companies that were enrolled in a yearly safety contest conducted by the Bureau of Mines, United States Department of the Interior. The contest was conducted in cooperation with the National Crushed Stone Association.

Reports from companies that participated in the contest of 1941 covered 51 plants, of which 4 were underground operations and 47 were open quarries. Stone-crushing plants connected with the enrolled quarries or mines were also included. The contest was the 16th consecutive safety competition conducted by the Bureau of Mines for the prevention of accidents in the crushed-stone industry.

Men employed at the 51 plants worked a total of 6,369,155 man-hours in 1941. Accidents during the year killed 3 men and injured 119, each injury resulting in at least 1 day of disability. The accident-frequency rate, covering fatal and nonfatal injuries, was 19.16, compared with 19.64 for the previous year.

Because of the 3 fatalities in 1941, compared with only 1 in 1940, the accident-severity rate increased in 1941, as each fatality is weighted as the equivalent of 6,000 days of disability. Hence, the severity rate, which covers fatal and nonfatal injuries, rose from 3.58 per thousand man-hours of employment in 1940 to 4.79 in 1941.

According to the rules under which the contest is conducted, the winner of the competition is the plant that establishes the lowest accident-severity rate. The winning plant is presented with a safety trophy provided by the *Explosives Engineer* magazine. The trophy is a bronze plaque on which is portrayed in bas-relief the quarry scene on the pedestal of the "Sentinels of Safety" trophy, which is the award for the National Safety Competition. Each plant, other than the trophy winner, that operates throughout the year with an accident-free record receives honorable mention and is presented a parchment reproduction of the quarry scene on the bronze plaque, and each employee of all the plants with accident-free records is presented with a Certificate of Honor. The trophy and parchment reproductions are usually formally presented at the annual conventions of the National Crushed Stone Association.

The 1941 award winner was the No. 3 mine of the Columbia Quarry Company. This mine, located at Valmeyer, Monroe County, Illinois, operated 159,569 man-hours without a lost-time or disabling injury to any employee. This is the first time since the contests were inaugurated that the award was won by an underground mine. This mine also received honorable mention in 1931, 1932, 1933, and 1936 for operating with perfect safety records.

TABLE 1

RELATIVE STANDING OF QUARRIES IN THE 1941 NATIONAL CRUSHED STONE ASSOCIATION SAFETY COMPETITION, BASED UPON THE ACCIDENT-SEVERITY RATES OF THE QUARRIES[1]

Code No.	Group No.	Man-hours worked	Number of injuries[2]					Average days of disability per temp. injury	Number of days of disability[2]					Frequency rate[3]	Severity rate[3]
			F.	P.T.	P.P.	Temp.	Total		F.	P.T.	P.P.	Temp.	Total		
2	1	158,858	—	—	—	—	—	—	—	—	—	—	—	0.000	0.000
3	2	141,899	—	—	—	—	—	—	—	—	—	—	—	.000	.000
4	3	136,211	—	—	—	—	—	—	—	—	—	—	—	.000	.000
5	4	91,185	—	—	—	—	—	—	—	—	—	—	—	.000	.000
6	5	87,074	—	—	—	—	—	—	—	—	—	—	—	.000	.000
7	6	86,823	—	—	—	—	—	—	—	—	—	—	—	.000	.000
8	7	72,775	—	—	—	—	—	—	—	—	—	—	—	.000	.000
9	8	66,935	—	—	—	—	—	—	—	—	—	—	—	.000	.000
10	9	59,426	—	—	—	—	—	—	—	—	—	—	—	.000	.000
11	10	58,035	—	—	—	—	—	—	—	—	—	—	—	.000	.000
12	11	57,303	—	—	—	—	—	—	—	—	—	—	—	.000	.000
13	12	56,220	—	—	—	—	—	—	—	—	—	—	—	.000	.000
14	13	52,907	—	—	—	—	—	—	—	—	—	—	—	.000	.000
15	14	49,368	—	—	—	—	—	—	—	—	—	—	—	.000	.000
16	15	43,691	—	—	—	—	—	—	—	—	—	—	—	.000	.000
17	16	43,606	—	—	—	—	—	—	—	—	—	—	—	.000	.000
18	17	32,271	—	—	—	—	—	—	—	—	—	—	—	.000	.000
19	18	21,313	—	—	—	—	—	—	—	—	—	—	—	.000	.000
20	19	15,581	—	—	—	—	—	—	—	—	—	—	—	.000	.000
21	20	14,705	—	—	—	—	—	—	—	—	—	—	—	.000	.000
22	21	274,955	—	—	—	2	2	9	—	—	—	18	18	7.274	.065
23	22	20,544	—	—	—	2	2	1	—	—	—	2	2	97.352	.097
25	23	102,427	—	—	—	3	3	5	—	—	—	16	16	29,289	.156
26	24	213,192	—	—	—	5	5	8	—	—	—	39	39	23.453	.183
27	25	83,206	—	—	—	2	2	11	—	—	—	21	21	24.037	.252
28	26	336,854	—	—	—	2	2	55	—	—	—	109	109	5.937	.324
29	27	250,398	—	—	—	6	6	14	—	—	—	84	84	23.962	.335
30	28	116,831	—	—	—	4	4	10	—	—	—	41	41	34.237	.351
31	29	101,100	—	—	—	5	5	8	—	—	—	39	39	49.456	.386
33	30	100,371	—	—	—	4	4	11	—	—	—	45	45	39.852	.448
34	31	251,563	—	—	—	10	10	12	—	—	—	118	118	39.751	.469
35	32	99,514	—	—	—	3	3	24	—	—	—	73	73	30.147	.734
36	33	74,418	—	—	—	2	2	37	—	—	—	74	74	26.875	.994
37	34	106,720	—	—	—	7	7	15	—	—	—	108	108	65.592	1.012
38	35	153,167	—	—	—	4	4	40	—	—	—	160	160	26.115	1.045
39	36	160,151	—	—	—	5	5	35	—	—	—	175	175	31.221	1.093
40	37	125,525	—	—	—	14	14	10	—	—	—	142	142	111.532	1.131
41	38	257,018	—	—	1	1	2	3	—	—	300	3	303	7.782	1.179
42	39	90,138	—	—	—	1	1	123	—	—	—	123	123	11.094	1.365
43	40	35,007	—	—	—	1	1	83	—	—	—	83	83	28.566	2.371
44	41	159,344	—	—	—	5	5	90	—	—	—	449	449	31.379	2.818
45	42	181,848	—	—	1	1	2	2	—	—	750	2	752	10.998	4.135
47	43	581,824	—	—	2	2	4	75	—	—	5,250	149	5,399	6.875	9.279
48	44	259,391	—	—	1	7	8	28	—	—	3,000	193	3,193	30.841	12.310
49	45	205,225	1	—	—	—	1	—	6,000	—	—	—	6,000	4.873	29.236
50	46	67,523	1	—	—	—	1	—	6,000	—	—	—	6,000	14.810	88.859
51	47	23,147	1	—	—	—	1	—	6,000	—	—	—	6,000	43.202	259.213
Totals and rates, 1941		5,777,587	3	0	5	98	106	23	18,000	0	9,300	2,266	29,566	18.347	5.117
Totals and rates, 1940		4,358,409	1	0	5	78	84	39	6,000	0	2,550	3,013	11,563	19.273	2.653

[1] As reports from mining companies are considered confidential by the Bureau of Mines, the identities of the plants to which this table relates are not revealed.

[2] F., fatal; P.T., permanent total disability; P.P., permanent partial disability; Temp., temporary disability.

[3] Frequency rate indicates the number of fatal, permanent, and other disabling injuries per million man-hours of exposure; severity rate indicates number of days of disability lost from injuries per thousand man-hours.

TABLE 2

RELATIVE STANDING OF UNDERGROUND MINES IN THE 1941 NATIONAL CRUSHED STONE ASSOCIATION SAFETY COMPETITION, BASED UPON THE ACCIDENT-SEVERITY RATES OF THE MINES[1]

Code No.	Group No.	Man-hours worked	Number of injuries[2]					Average days of disability per temp. injury	Number of days of disability[2]					Frequency rate[3]	Severity rate[3]
			F.	P.T.	P.P.	Temp.	Total		F.	P.T.	P.P.	Temp.	Total		
1	1	159,569	—	—	—	—	—	—	—	—	—	—	—	0.000	0.000
24	2	150,599	—	—	—	3	3	6	—	—	—	19	19	19.920	.126
32	3	72,539	—	—	—	6	6	5	—	—	—	31	31	82.714	.427
46	4	208,861	—	—	1	6	7	20	—	—	750	119	869	33.515	4.161
Totals and rates, 1941		591,568	0	0	1	16	16	11	0	0	750	169	919	27.047	1.553
Totals and rates, 1940		375,987	0	0	1	8	9	111	0	0	4,500	888	5,388	23.937	14.330

[1] See footnotes 1, 2, and 3, Table 1.

Twenty plants, 2 more than in 1940, were awarded honorable mention for operating throughout the year with accident-free records. The plants are as follows:

1. Watertown limestone quarry, Watertown, Jefferson County, N. Y., operated by The General Crushed Stone Company, worked 158,858 man-hours.
2. North Branford No. 7 trap-rock quarry, North Branford, New Haven County, Conn., operated by The New Haven Trap Rock Company, worked 141,899 man-hours.
3. North American limestone quarry, Hagerstown, Washington County, Md., operated by the North American Cement Corporation, worked 136,211 man-hours.

TABLE 3

YEARLY SUMMARY—OPEN QUARRIES IN THE NATIONAL CRUSHED STONE ASSOCIATION SAFETY COMPETITION, 1926-41

Year	Plants	Man-hours worked	Number of injuries[1]					Number of days of disability[1]					Frequency rate[2]	Severity rate[2]
			Fatal	P.T.	P.P	Temp.	Total	Fatal	P.T.	P.P.	Temp.	Total		
1925[3]	38	4,927,402	4	——	3	292	299	24,000	——	3,600	5,286	32.886	60.681	6.674
1926	40	5,298,983	3	——	6	207	216	18,000	——	9,000	4,239	31,239	40.763	5.895
1927	48	7,876,791	9	——	2	458	469	54,000	——	2,100	7,186	63,286	59.542	8.034
1928	53	7,509,098	8	——	4	322	334	48,000	——	8,700	5,493	62,193	44.479	8.282
1929	53	7,970,325	4	——	5	286	295	24,000	——	5,760	5,533	35,293	37.012	4.428
1930	68	8,013,415	6	——	9	227	242	36,000	——	7,250	3,671	46,921	30.199	5.855
1931	58	5,085,857	4	——	13	198	215	24,000	——	18,660	3,540	46,200	42.274	9.084
1932	40	2,661,850	1	——	4	75	80	6,000	——	6,750	2,481	15,231	30.054	5.722
1933	40	2,704,871	1	——	1	67	69	6,000	——	48	2,893	8,941	25.510	3.306
1934	46	3,288,257	1	——	2	106	109	6,000	——	2,850	1,873	10,723	33.148	3.261
1935	46	4,166,306	2	1	8	77	88	12,000	6,000	9,900	3,015	30,915	21.122	7.420
1936	50	6,399,023	5	——	14	182	201	30,000	——	8,168	4,590	42,758	31.411	6.682
1937	47	6,199,001	7	——	9	136	152	42,000	——	5,875	4,461	52,336	24.520	8.443
1938	47	4,658,119	2	——	6	76	84	12,000	——	6,600	3,184	21,784	18.033	4.677
1939	44	4,219,086	2	——	2	51	55	12,000	——	4,800	1,678	18,478	13.036	4.380
1940	46	4,358,409	1	——	5	78	84	6,000	——	2,550	3,013	11,563	19.273	2.653
1941	47	5,777,587	3	——	5	98	106	18,000	——	9,300	2,266	29,566	18.347	5.117
Total 1926-41	—	86,186,978	59	1	95	2,644	2,799	354,000	6,000	108,311	59,116	527,427	32.476	6.120
Total 1925-41	—	91,114,380	63	1	98	2,936	3,098	378,000	6,000	111,911	64,402	560,313	34.001	6.150

[1] See footnotes 1 and 2, Table 1.

[3] The National Crushed Stone Association Safety Competition began in 1926; figures for 1925 for company members are given for comparison.

TABLE 4

YEARLY SUMMARY—UNDERGROUND MINES IN THE NATIONAL CRUSHED STONE ASSOCIATION SAFETY COMPETITION 1926-41

Year	Plants	Man-hours worked	Number of injuries[1]					Number of days of disability[1]					Frequency rate[2]	Severity rate[2]
			Fatal	P.T.	P.P	Temp.	Total	Fatal	P.T.	P.P.	Temp.	Total		
1925[3]	3	400,672	—	—	—	29	29	——	——	——	228	228	72.378	0.569
1926	3	517,926	—	—	—	34	34	——	——	——	533	533	65.646	1.029
1927	2	318,449	1	—	1	14	16	6,000	——	300	68	6,368	50.244	19.997
1928	5	542,193	1	—	1	68	70	6,000	——	300	888	7,188	129.105	13.257
1929	4	665,520	1	—	1	30	32	6,000	——	300	617	6,917	48.083	10.393
1930	6	595,367	1	—	1	15	17	6,000	——	225	468	6,693	28.554	11.242
1931	3	345,105	—	—	—	4	4	——	——	——	147	147	11.591	.426
1932	2	158,450	—	—	—	6	6	——	——	——	165	165	37.867	1.041
1933	3	229,381	—	—	—	11	11	——	——	——	349	349	47.955	1.521
1934	4	248,146	—	—	—	13	13	——	——	——	287	287	52.389	1.157
1935	2	175,994	—	—	—	3	3	——	——	——	249	249	17.046	1.415
1936	4	334,747	1	—	—	7	8	6,000	——	——	117	6,117	23.899	18.274
1937	3	364,680	—	—	—	3	3	——	——	——	91	91	8.226	.250
1938	3	334,442	—	—	—	2	2	——	——	——	133	133	5.980	.398
1939	4	393,039	—	—	1	7	8	——	——	600	457	1,057	20.354	2.689
1940	4	375,987	—	—	1	8	9	——	——	4,500	888	5,388	23.737	14.330
1941	4	591,568	—	—	1	15	16	——	——	750	169	919	27.047	1.553
Total 1926-41	—	6,190,994	5	0	7	240	252	30,000	0	6,975	5,626	42,601	40.704	6.881
Total 1925-41	—	6,591,666	5	0	7	269	281	30,000	0	6,975	5,854	42,829	42.630	6.497

[1] See footnotes 1 and 2, Table 1

[3] The National Crushed Stone Association Safety Competition began in 1926; figures for 1925 for company members are given for comparison.

TABLE 5

YEARLY SUMMARY—OPEN QUARRIES AND UNDERGROUND MINES IN THE NATIONAL CRUSHED STONE ASSOCIATION SAFETY COMPETITION, 1926-41

Year	Plants	Man-hours worked	Number of injuries[1]					Number of days of disability[1]					Frequency rate[2]	Severity rate[2]
			Fatal	P.T.	P.P	Temp.	Total	Fatal	P.T.	P.P.	Temp.	Total		
1925[3]	41	5,328,074	4	——	3	321	328	24,000	——	3,600	5,514	33,114	61.561	6.215
1926	43	5,816,909	3	——	6	241	250	18,000	——	9,000	4,772	31,772	42.978	5.462
1927	50	8,195,240	10	——	3	472	485	60,000	——	2,400	7,254	69,654	59.181	8.499
1928	58	8,051,291	9	——	5	390	404	54,000	——	9,000	6,381	69,381	50.178	8.617
1929	57	8,635,845	5	——	6	316	327	30,000	——	6,060	6,150	42,210	37.865	4.888
1930	74	8,608,782	7	——	10	242	259	42,000	——	7,475	4,139	53,614	30.086	6.228
1931	61	5,430,962	4	——	13	202	219	24,000	——	18,660	3,687	46,347	40.324	8.534
1932	42	2,820,300	1	——	4	81	86	6,000	——	6,750	2,646	15,396	30.493	5.459
1933	43	2,934,252	1	——	1	78	80	6,000	——	48	3,242	9,290	27.264	3.166
1934	50	3,536,403	1	——	2	119	122	6,000	——	2,850	2,160	11,010	34.498	3.113
1935	48	4,342,300	2	1	8	80	91	12,000	6,000	9,900	3,264	31,164	20.957	7.177
1936	54	6,733,770	6	——	14	189	209	36,000	——	8,168	4,707	48,875	31.038	7.258
1937	50	6,563,681	7	——	9	139	155	42,000	——	5,875	4,552	52,427	23.615	7.987
1938	50	4,992,561	2	——	6	78	86	12,000	——	6,600	3,317	21,917	17.226	4.390
1939	48	4,612,125	2	——	3	58	63	12,000	——	5,400	2,135	19,535	13.660	4.236
1940	50	4,734,396	1	——	6	86	93	6,000	——	7,050	3,901	16,951	19.643	3,580
1941	51	6,369,155	3	——	6	113	122	18,000	——	10,050	2,435	30,485	19.155	4.786
Total 1926-41	—	92,377,972	64	1	102	2,884	3,051	384,000	6,000	115,286	64,742	570,028	33.027	6.171
Total 1925-41	—	97,706,046	68	1	105	3,205	3,379	408,000	6,000	118,886	70,256	603,142	34.583	6.173

[1] See footnotes 1 and 2, Table 1

[3] The National Crushed Stone Association Safety Competition began in 1926; figures for 1925 for company members are given for comparison.

4. North American limestone quarry, Martinsburg, Berkeley County, W. Va., operated by The North American Cement Corporation, worked 91,185 man-hours.

5. White Haven sandstone quarry, White Haven, Luzerne County, Pa., operated by The General Crushed Stone Company, worked 87,074 man-hours.

6. Cedar Hollow limestone quarry, Devault, Chester County, Pa., operated by the Warner Company, worked 86,823 man-hours.

7. Winchester trap-rock quarry, Winchester, Middlesex County, Mass., operated by The General Crushed Stone Company, worked 72,775 man-hours.

8. Rocky Hill No. 3 trap-rock quarry, Rocky Hill, Hartford County, Conn., operated by The New Haven Trap Rock Company, worked 66,935 man-hours.

9. Plainville No. 4 trap-rock quarry, Plainville, Hartford County, Conn., operated by The New Haven Trap Rock Company, worked 59,426 man-hours.

10. Middlefield No. 1 trap-rock quarry, New Haven County, Conn., near Middlefield, Middlesex County, Conn., operated by The New Haven Trap Rock Company, worked 58,035 man-hours.

11. Auburn limestone quarry, Auburn, Cayuga County, N. Y., operated by The General Crushed Stone Company, worked 57,303 man-hours.

TABLE 6.

NUMBER OF INJURIES, BY CAUSES, AT QUARRIES AND UNDERGROUND MINES IN THE NATIONAL CRUSHED STONE ASSOCIATION SAFETY COMPETITION IN 1941.

Cause	Fatal	Permanent Total	Permanent Partial	Temporary	Total
Falls and slides of rock	—	—	—	9	9
Handling materials or objects	—	—	—	10	10
Hand tools	—	—	—	8	8
Explosives	1	—	1	—	2
Haulage	—	—	3	10	13
Falls of persons	—	—	—	19	19
Bumping against objects	—	—	—	5	5
Falling objects	—	—	—	6	6
Flying objects or particles	—	—	—	6	6
Electricity	—	—	—	1	1
Drilling	—	—	—	4	4
Machinery	1	—	2	7	10
Gas (fumes from torch)	—	—	—	4	4
Burns	—	—	—	4	4
Other causes	1	—	—	4	5
Total	3	0	6	97	106
Not stated	—	—	—	16	16
Grand total	3	0	6	113	122

12. North American limestone quarry, Catskill, Greene County, N. Y., operated by the North American Cement Corporation, worked 56,220 man-hours.

13. Union Furnace limestone quarry, Huntingdon County, Pa., near Tyrone, Blair County, Pa., operated by the American Lime & Stone Company, worked 52,907 man-hours.

14. Verplanck limestone quarry, Verplanck, Westchester County, N. Y., operated by the New York Trap Rock Corporation, worked 49,368 man-hours.

EMPLOYEES OF THE NO. 3 MINE OF THE COLUMBIA QUARRY COMPANY, VALMEYER, MONROE COUNTY, ILLINOIS, WINNER OF THE N. S. C. A. CONTEST, 1941

Top row left to right:
ADAM ANDRES, *Timekeeper;* ARNOLD HOFFMANN, *Night Foreman;* EARL PFLASTERER, *Engineer;* MONROE SENSEL, *Foreman.*

Bottom row left to right:
CARL ASSELMEIER, *Foreman;* ODIE STAHL, *Rodman;* FRED A. KREWER, *Superintendent;* THOS. S. CHENEY, *Safety Engineer.*

15. Jordanville limestone quarry, Jordanville, Herkimer County, N. Y., operated by The General Crushed Stone Company, worked 43,691 man-hours.

TABLE 7

DAYS OF DISABILITY BY CAUSES OF INJURIES AT QUARRIES AND UNDERGROUND MINES IN THE NATIONAL CRUSHED STONE ASSOCIATION SAFETY COMPETITION IN 1941.

Cause	Fatal	Permanent Total	Permanent Partial	Tempo-rary	Total
Falls and slides of rock	—	—	—	508	508
Handling materials or objects	—	—	—	127	127
Hand tools	—	—	—	74	74
Explosives	6,000	—	750	—	6,750
Haulage	—	—	7,800	245	8,045
Falls of persons	—	—	—	581	581
Bumping against objects	—	—	—	76	76
Falling objects	—	—	—	141	141
Flying objects or particles	—	—	—	102	102
Electricity	—	—	—	4	4
Drilling	—	—	—	27	27
Machinery	6,000	—	1,500	128	7,628
Gas (fumes from torch)	—	—	—	31	31
Burns	—	—	—	30	30
Other causes	6,000	—	—	18	6,018
Total	18,000	0	10,050	2,092	30,142
Not stated	—	—	—	343	343
Grand total	18,000	0	10,050	2,435	30,485

16. Earlham cement-rock quarry, Earlham, Madison County, Ia., operated by the Marquette Cement Mfg. Company, worked 43,606 man-hours.

17. McCoy limestone quarry, Bridgeport, Montgomery County, Pa., operated by the Warner Company, worked 32,271 man-hours.

18. Cheshire No. 6 trap-rock quarry, West Cheshire, New Haven County, Conn., operated by The New Haven Trap Rock Company, worked 21,313 man-hours.

19. No. 4 trap-rock quarry, Knippa, Uvalde County, Tex., operated by the Southwest Stone Company, worked 15,581 man-hours.

20. Granby No. 5 trap-rock quarry, Granby, Hartford County, Conn., operated by The New Haven Trap Rock Company, worked 14,705 man-hours.

Eighteen States were represented in the 1941 contest. They are as follows:

California	New York
Connecticut	North Carolina
Georgia	Ohio
Iowa	Oklahoma
Illinois	Pennsylvania
Maryland	South Carolina
Massachusetts	Texas
Michigan	Virginia
Missouri	West Virginia

THOS. S. CHENEY, *Safety Engineer*

The open-quarry group operated 5,777,587 man-hours, an increase of nearly 1½ million man-hours

(*Continued on page 15*)

The Vital Need for Scrap Steel[1]

By RICHARD P. COOKE

• Industry has been called on to make wornout and obsolete equipment immediately available as iron and steel scrap. It is certain that every crushed stone producer will immediately wish to make his contribution to this vitally important part of the war effort.

THE ability of America's steel mills to produce at capacity next year will be measured in large part by the degree of success of the present steel scrap drive.

Steel production depends on raw materials, of which scrap and pig iron each account for about one half. Pig iron capacity is being increased, but not much more than enough to match the over-all boost in the national steel-making facilities. The steel industry's annual capacity is now officially about 88 million tons but it is headed for 92 million tons by the year-end and even more in 1943.

That's why the economic body of the nation, like a physical organism in moment of crisis, is being called on to draw on its reserves of tissue and heart.

The task of keeping the steel furnaces from falling down on their armament job is more than normal economics can cope with. The tissues which must be drawn upon are the stores of discarded or partly-used iron and steel accumulated during decades of industrial plenty; the heart is the willingness of citizens to do something for which the recompense is not alone in money.

The war effort needs more steel than the nation's mills can turn out, even though those mills now have a record capacity. It cannot afford to waste an ounce of that capacity—have it stand idle for lack of a basic raw material.

That's why millions of Americans have gone into the steel business in the present scrap drive.

The new contributor to the campaign for ferrous materials may well have a lot of questions to ask. Why is scrap short now, when it hasn't been before? How many kinds of scrap are there, and who says what kind goes where? What does it cost to handle scrap? Why can't more pig iron be used to make up for lack of scrap? And how long must the collection of scrap by citizens and industrialists go on? These are a few of the perplexities which suggest themselves. An effort will be made here to answer them, starting with the last in order, for that is the one of great practical importance.

Drive Must Be Continued

The scrap drive will have to be continued, although in a modified form, for a long time. The present drive, if successful, will help build a winter stockpile of 4 to 5 millions tons of scrap (from outside the steel industry) to keep furnaces melting during the months when old metal literally is frozen fast. But the impetus generated this Fall must become a habit of mind. The American people will have to keep on being salvage-minded for the duration.

This necessity stems from two factors: First, the speed of increase of steel ingot capacity (from 81.6 million tons annually in 1940 to the current figure of 88½ million tons) is such and the operation of these facilities is being sustained at such an unprecedentedly high peak that all previous normal relationships have been upset. There now are no slack periods when scrap can pile up. Second, the export of big tonnages of steel ingots and semi-finished steel have seriously reduced the return of "home" scrap (which originates within the steel mills themselves) and to lesser degree "prompt industrial" scrap, which is machined off as shells and guns are formed from finished or semifinished steel.

These factors have placed a heavy burden on the nation's pig iron capacity, which is nearing its elastic limit of 63 or 64 million tons annually (about 60.8 tons July 1 with about 3.6 million tons building). But iron and steel castings outside the steel industry proper take up some 8 million tons of this capacity, and the remaining 54 or 55 million tons won't support a ratio of much better than 60 per cent pig iron to 40 per cent scrap. Currently the pig iron percentage is a few points below this figure, and in years when scrap has been plentiful has dipped below the 50 per cent level.

75 Grades of Scrap

Scrap for the steel industry for years has been called "scrap iron," which is very much of an oversimplification. There are actually 75 different grades. The most desirable is No. 1 heavy melting steel, which has the least metallurgical loss in the open hearth furnace. Heavy melting steel must be ¼ inch or more thick, not over 18 inches wide nor more than 5 feet long.

[1] Reprinted from the Sept. 30, 1942, issue of the *Wall Street Journal*, through the courtesy of that publication.

This material is something which an individual contributor to the campaign won't see much of. Even No. 2 melting steel is scarce around homes and backyards. It must be ⅛ inch thick, and of specified size as well as being free from all brass, copper, tin or other substances which should not be mixed with new steel. The list continues down through bushings, turnings, cast iron borings and many other categories. Not only are metallurgical qualities specified, but scrap also is designated specifically for open hearth furnaces (basic and acid furnace requirements being different), for electric furnaces (which can and do charge close to 100 per cent of scrap in many instances), for gray iron foundries (which take a sizable part of the 9 million tons of non-steel making scrap) and for Bessemer converters.

This complex of grades and requirements is too great for an individual or civic organization helping the current drive to cope with, and here is where the regular scrap industry comes in.

Likened to a Pyramid

The scrap set-up may be described as a pyramid: At the bottom is a big army of little junk men, who pick up odds and ends and carry them to the yards of larger dealers. These dealers are skilled in sorting and preparation. At the top are the very big dealers, specializing in certain types. They know approximately the composition of most types, and with power shears, acetylene torches and magnets they transform the heterogeneous mass into something useful. Light metal clippings and fragments are put into huge press (of which there are some 500 in the country, but not enough to handle the present influx of old material) producing the "hydraulically compressed bundles" and baled scrap which are much more efficient than if the individual pieces were fed into the steel furnace.

There are some 15,000 scrap dealers in the country, and about 200,000 people all-told work at this far-flung job of collection, preparation, sorting and grading. And here enters the factor which makes it difficult to pay the individual originator of scrap much for his contribution. The Institute of Scrap Iron & Steel industry estimates the following costs in bundling, for example: Press operations, with superintendance, hauling, labor, insurance, etc., figured in, cost $2.81 a short ton; power, light, lubrication, etc., cost another $1.16 a ton and local office expense cost 28 cents a ton, or a grand total of $4.25 a ton. Added to this must be the compensation for the small dealer who collects the scrap, and transportation costs. After all these expenses, the scrap contributor obviously cannot expect to get a great deal, especially as the grades he furnishes don't command top prices. The labor of removing zinc, lead, tin, dirt and other impurities also is large and these impurities are greatest in the miscellaneous material found outside of industry.

Many Problems Involved

The problems involved in collecting industrial scrap are of a different order. There has to be a good deal of sorting and preparation here, too, but the plant manager usually can be of great assistance in proper tagging of old material as to alloy composition, etc. But plant operators have a financial problem. If dies or parts which can't be used in production due to war restrictions are to be scrapped, their junk value is far below the figure at which they are carried on the company's books, creating a bookkeeping loss.

However, it is now pointed out to industrialists that these losses in most instances can be charged off for income tax purposes, which makes the burden much less onerous than would be the case if current tax rates were not so high. The industrial manager also often has to give up parts and equipment for which some day he might have a real use, a hard but necessary decision in the light of present conditions.

In summary, the following scrap statistics may help to clarify the whole picture in the mind of the scrap drive contributor: This year the steel industry will have consumed some 52 million net tons of pig iron and ferro-alloys (alloying elements); it will have consumed 26.6 million tons of home scrap and nearly 19 million tons of purchased scrap, the kind which the scrap drive is to get in. Beyond this will be needed 9 million tons for foundry operations. A good deal of household scrap is suitable for this foundry work.

Goal Is 88 Million Tons

These big tonnages are subject—in the case of steel furnaces—to a metallurgical loss of around 10 per cent. The goal of this effort is to produce 88 million tons of ingots, the annual capacity at the present time. Figures to date indicate 1942 production will miss this goal by 2 million to 3 million tons.

Scrap in the past has been the most volatile factor in the steel raw material equation. When the industrial machine lagged, as in 1932, no one wanted scrap, and high grade material slumped to $8.50 a ton; when the steel furnaces roared up to full capacity in 1940, the average quotation shot ahead to $22.50 a ton.

(*Continued on page 14*)

WPB Organizes Campaign for Scrap Collection

THE organization of the all-out scrap collection, one of the most colossal jobs ever undertaken by this nation, is going ahead under the direction of the Conservation Division of the War Production Board, which has set a goal of 17,000,000 tons of metal scrap alone for collection in the next few months. It is estimated that a vast reservoir of about 10,000,000 tons of scrap metal is now lying idle in homes, on farms, and in industrial plants and business concerns.

Many thousands of tons of scrap have already been collected in response to the SOS which industries, eager to keep up present record breaking production, have sent out.

Swinging into action, the Conservation Division of the WPB has under way an intensified program of scrap collection and salvage operations which covers the country and which is organized to obtain scrap wherever it may exist.

Scrap materials which are now hidden in homes, on farms and in commercial establishments, are being sought by the General Salvage Section of the Conservation Division. This Section has set up 13,000 local Salvage Committees, with an aggregate volunteer membership of 130,000 persons, to expedite the flow of precious scrap from these sources.

Organization Grows

An Industrial Salvage Section, charged with the responsibility of stimulating the scrap collections from industry, particularly scrap such as obsolescent or unused machinery and equipment, has already organized industry-by-industry and plant-by-plant collections in over 400 communities.

Its activities have already resulted in the appointment of some 27,000 salvage managers in industrial plants. Field representatives of this Section are now working in industrial centers to assist in the organization of still more local groups charged with obtaining salvage materials from industry.

Two other sections of the Conservation Division have been set up to take care of other sources of scrap. These are (1) The "Graveyard" Section, which is working to see that cars in automobile graveyards are moved to the steel mills inside of 60 days and (2) the Special Projects Section, set up to facilitate the scrapping of unused street car and railroad rails, sunken ships and similar items.

• One hundred and thirty million Americans are facing one of the most important assignments ever given to the home front in this nation's wartime history.

To meet America's increasingly critical shortage of raw materials every man, woman and child in the country is expected to be enrolled in the nation-wide drive for various scrap materials, lack of which is already beginning to hamper the war effort.

Results From the Industrial Front

Wasteful America is at last shaking out its figurative wastebaskets and today, in industry, "getting into the scrap" means "don't throw away anything but dirt." The process of uncovering extra scrap—war production's vital need, and lack—is accelerating on a thousand fronts in factories, in mines, in refineries, utilities and power plants throughout the land.

One paper mill has "mined" 1,800 tons of previously unsuspected or ignored steel. One coal mine has sent up a carload of scrap iron every day for twenty days.

Other instances of all-out house-cleaning demonstrate what industry can do to further help the scrap drive, even where efficient salvage methods have been normal practice.

The General Electric Company, for example, reports that appointment of special men to survey nine separate plants resulted in uncovering 6,000 tons of dormant metals that would otherwise not have been turned over to waste dealers and armament production. Of this, about 90 per cent will go to steel mills.

"Stop Holding Onto Things"

When Goodyear Tire & Rubber Company asked its foremen to "stop holding onto things" in a plant that had conscientiously kept scrap moving as a matter of good housekeeping, they collected 3,216,000 pounds of iron and steel from old molds, obsolete machinery and the like in the space of a single week.

Utilities, actively organized for direct cooperation with the WPB conservation group, have already instituted a high-pressure program. A Kansas company not only disposed of 48,000 pounds of scrap copper but broke up two ancient steam-driven compressors for all available scrap iron and steel.

Another utility with an annual contract for scrap removal and a scavenging program for recondition-

ing every possible used part, nevertheless reports a considerable increase in its net junk over-flow.

Industrials too, are discovering unsuspected weapon-fodder. A Pennsylvania coal company not only found 290,000 pounds of miscellaneous iron and steel, but also raised 11,000 pounds of brass and bronze and 2,000 pounds of copper.

A manufacturer of gas appliances has cleared out his salvage parts department to the tune of 90 tons of scrap. A company in California liquidated over 800 tons of rails long frozen by a claim suit. An Ohio cement mill ferreted out two carloads of scrap iron and will keep at the collection work until everything not usefully nailed down has been turned over.

These examples represent but a few of widespread organized efforts in industry to build the scrap pile higher. They point the way for thousands of other industrial establishments to make even greater contributions to the production of planes, ships, tanks, guns and shells. Boiler rooms, turbine basements and process plants, notorious for accumulation of spare items laid away for "someday" contingencies, now become potential raw material stockpiles.

The Rules Are Simple

But no part of this salvage program aims at removing useful parts from service or stock where a reasonably immediate need exists or is foreseen. Nor should items that can be returned to market through the manufacturer or distributor or by direct swap, be relegated to junk. The point is that an all-out clean-up in many instances discloses unsuspected quantities of neglected scrap that would otherwise serve no useful part in the war effort or anywhere else.

A simple but effective program has been developed by the Industrial Salvage Section of WPB. It works best when stimulated by some energetic individual already part of an industrial organization. This means that some man in every plant and factory has to be sold that the need for scrap is critical, that each plant can make a worthwhile contribution to actual war production, and that he, as an individual, can and should *do something* about it.

The rules of the game are simple. Uncover the scrap, segregate alloys and copper, call in a local waste dealer and your part is done—for the initial stage. Then follow-up regularly.

Auto Graveyards Serve Important Function

The steel industry has been getting more than 400,000 tons of scrap metal per month for the last four months from automobile graveyards and War Production Chief Donald M. Nelson asks the public not to "jump to conclusions" at the sight of several acres covered by old worn out and wrecked cars.

"Those jalopies you see in the graveyard aren't just lying there," he said, "They are on their way to the furnaces, to help us win this war."

Nelson explained that a friend had complained because a great many old cars were piled up in a certain auto graveyard, and he took the opportunity to clear up any misunderstanding on this phase of the scrap salvage effort.

"Let's spend a minute seeing how these graveyards operate," Nelson said.

Remove Replacement Parts

"Your old jalopy is hauled in and bought by the graveyard operator. It can't be moved on to the furnace right away. First, its non-metallic components have to be stripped off. Second, it contains a number of parts that can and must be salvaged. Remember we are not making repair and replacement parts for your auto during this war; the usable parts from the graveyard jalopies must be taken out and put back into the stream of commerce.

"In addition there are lots of other metal in the car that don't go into the furnaces—copper for instance, brass and aluminum, which must be directed to the industries that can use them instead of the steel mill which can't use them.

"After all of these things have been done, the old car—or what's left of it—is ready to be moved on to the furnace, where it will be melted down and used to make something we need to win this war. But the process takes time. The scrap dealer can't possibly buy a car in the morning, process it at noon and send it to the mill that evening.

"Here is another point to bear in mind. The auto graveyard is a business—an essential business in the collection of scrap metals. If we should move in and take all of the cars out of the graveyards, we simply would put an end to that business. Then there would be no organization to receive such scrap from citizens and send it along to the furnaces.

Get It to Junkman

"So, the next time you pass an auto graveyard, or a scrap dealer's yard, don't rush to the conclusion that the material you see there is just stagnating. It has got into the flow of commerce and will wind up at the furnace when it is needed. The part that the War Production Board plays in all of this is to see to it that the scrap gets into the junkman's hands, and that the junkman handles it efficiently after he

(*Continued on page 17*)

Federal Works Agency Announces Post-War Highway Building Program

BRIGADIER GENERAL Philip B. Fleming, Federal Works Administrator, today announced that the first actual engineering work on post-war public construction—a projected highway building program to cost nearly $500,000,000—is well under way.

The engineering work, extending from conception of the improvements through surveys and the preparation of detailed plans and specifications ready for the contractors' bids, is going forward as a joint Federal-State undertaking. It is being financed from a special $10,000,000 fund which the Congress authorized in the Defense Highway Act of 1941 with the requirement that the States match funds for projects according to the usual Federal-aid plan.

Thomas H. MacDonald, Public Roads Commissioner of the Federal Works Agency, reported to General Fleming the approval of projects, including the drafting of engineering plans, in the seven States of California, Massachusetts, Mississippi, Missouri, New Jersey, New York, and Oregon, and in the District of Columbia. Additional projects are under consideration by the Public Roads Administration, Mr. MacDonald added. Actual construction will begin after the war.

General Fleming made it clear that this program is only part of the Federal-aid highway construction and improvement program to be undertaken after the war. He pointed out that the projects on which the PRA and State highway department engineers are now working are aimed at the solution of major traffic problems on main routes through and around cities and on sections of highway that will form part of the proposed interregional highway system.

"Only projects of such magnitude as to require considerable time and study in planning are considered eligible for these funds," General Fleming said. "They are not available for projects that rquire only normal engineering work in advance of construction. These major road-building undertakings, together with normal extension of the primary and secondary Federal-aid highway systems, plus the extensive repair work that will be necessary as a result of wartime curtailment of highway maintenance, will form an important part of the reserve shelf of necessary public works that the Federal Works Agency is accumulating to help take up the slack of post-war readjustment."

"At the present time," said General Fleming, "road-building, like all other construction activities of the Federal Works Agency, is of necessity confined to projects that are indispensable to successful prosecution of the war and lack of which would hamper the primary war program. With the coming of victory, however, an extensive public works program will perform a valuable function in providing useful employment to men demobilized from the armed forces and to many others who can be expected to be released while industry is converting from wartime to a peacetime production."

The engineering work under way is directed to solving the many problems that arise in developing a general plan of improvement and is directed also to preparation of detailed plans for construction. Projects approved are as follows:

California—Completion of Bayshore Freeway from the San Francisco-Oakland Bay Bridge on the west side of San Francisco Bay via San Mateo, Redwood City, Moffett Field and San Jose to connect with present route southeast of San Jose. Plans for 9 miles of this route are already completed by the State and the new work covers 42 miles.

A new limited access highway from a point on High Street in Oakland along the east shore of San Francisco Bay to connect with the proposed Bayshore Freeway north of San Jose. This new route, 33 miles long, will be known as the Eastshore Freeway and will bypass congested urban and industrial areas.

District of Columbia—A new trunk highway from the central area of Washington in the vicinity of 12th and K Streets, N. W., to the northeastern section and toward a connection with U. S. 1 to Baltimore at 15th and H Streets, N. E. A section of the route is tentatively planned as a depressed highway.

A master plan for the development of Rock Creek and Potomac Parkway from near Massachusetts Avenue to the intersection of Blagden Avenue and Broad Branch Road. The route will provide a connection between arterial highways east and west of Rock Creek Park.

Massachusetts—Development of a new route between Wakefield and Wellesley passing to the north and west of Boston, 24 miles in length. This is a continuation of development already under way.

A new inland route beginning near Danvers, pass-

ing to the west of Gloucester and extending to a point near Rockport. The purpose is to avoid congestion in cities along the coast. Length 15 miles.

A new route north of U. S. 20 from the Brimfield-Monson town line to near the Russell-Westfield town line avoiding the congested areas of Palmer, Wilbraham, Springfield, West Springfield and Westfield. Length 29.5 miles.

Mississippi—An alternate route for U. S. 45, 2.5 miles in length, passing to the west of Corinth.

A new route beginning in Jackson and running northeast providing more direct travel than U. S. 51. Length 8 miles.

An alternate route for U. S. 51 passing to the west of Terry. Length 3.5 miles.

Relocations of U. S. 80 passing near Bolton and Edwards and involving separation of grades with Alabama and Vicksburg Railroad. Length 7 miles.

A new location of U. S. 11, 45 and 80 through Meridian to avoid congestion. Length 9 miles.

An alternate route for U. S. 78 south of Albany to avoid congested areas. Length 3.5 miles.

Missouri—Alternate route on U. S. 66 between Stafford and Phillipsburg to provide for more direct travel. Length 24.5 miles.

Development of a north-south and two east-west routes through Kansas City connecting principal routes entering city with downtown section. Total length 21.5 miles.

A new route from a point south of Joplin to State line and connecting with new improvements to be made in Kansas from the State line to Baxter Springs. The combined improvements will provide an alternate route for through travel on U. S. 66 that avoids congested areas.

A section of the Express Highway and Chouteau Avenue in St. Louis with a view to completion of an east-west route through the city to a point on 7th Street near the municipal bridge over the Missouri River. Length 3.2 miles .

Selection and planning of the best route from the west into and through St. Louis to connect with Clayton Road, the express highway leading to the preceding project. Length 1.5 miles.

Development of new routes passing both north and south of St. Louis. The northern route is to extend from a point west of St. Charles to a point on Cass Avenue about .6 miles from the approach to Eads Bridge. Length 26.5 miles. The southern route is to extend from a point southeast of Valley Park to a junction with the northern route on Cass Avenue. Length 20.5 miles.

New Jersey—A new limited access route beginning at the west end of George Washington Bridge and extending southwest via Bayonne, Elizabeth, Linden and Woodbridge to a point on the Raritan River about 3 miles east of New Brunswick. Length 36 miles.

New York—Extension of Hutchinson River Parkway and Eastern Boulevard in the Bronx to a junction with the Boston Post Road and Merritt Parkway at the New York-Connecticut State line. This limited access route is to be known as the Pelham-Portchester Express Highway. Length 14 miles.

Improvement of a section of the Brooklyn-Queens connecting highway from Kent Avenue to Morgan Avenue in Brooklyn. This is a section of the limited access highway for through traffic from Flatbush Avenue in Brooklyn to Astoria Boulevard and Grand Central Parkway near La Guardia Field in Queens. Length of project 2.2 miles. The improvement will serve as an alternate route for traffic between Brooklyn and points north and east of the metropolitan area via Triborough and Whitestone bridges.

A section of a new route passing west of Albany and east of Schenectady beginning on U. S. 9W near Beckers Corners south of Albany to near Burnt Hills northeast of Schenectady. Grade separations with important highways and railroads are involved. Length 28.5 miles.

Oregon—Major relocation of the Columbia River Highway (U. S. 30) is practically a continous section between Cascade Locks and the Dalles, following as closely as possible along the Columbia River. Length 41 miles.

Relocation of Oregon Coast Highway (U. S. 101) between Tillamook and Pleasant Valley. Length 8 miles.

The Vital Need for Scrap Steel

(*Continued from page 10*)

Steel men bought more scrap or more pig iron (the other half of the raw material equation) for reasons of price, with scrap always the cheaper of the two materials. The relationship was simple: The higher the price the greater the scrap supply which came in, and there was always plenty of it to keep the steel furnaces working.

Today's ceiling of $20 a ton for No. 1 heavy melting steel, the premier grade, has put an end to the supply-and-demand economy. Unceiled scrap prices might have risen to fantastic heights (they hit $36 a ton in 1917 when controls were not what they are today). The government could not, however, entirely get around the price factor, but through the operation of War Materials, Inc., it will pay out-of-pocket costs for getting scrap out of difficult places.

Crushed Stone Safety Competition of 1941

(*Continued from page 8*)

over 1940. The 1941 accident-frequency rate of 18.347 for the quarry group is 5 percent below the 1940 rate of 19.273. The accident-severity rate increased from 2.653 in 1940 to 5.117 in 1941. The three fatal injuries charged with 18,000 days of disability and the five permanent partial injuries charged with 9,300 days of disability caused the increase in the accident-severity rate.

Employment at the four underground mines, which were enrolled in both the 1940 and 1941 contests, increased 215,500 man-hours in 1941 over 1940. The 1941 accident-frequency rate increased 14 percent whereas the accident-severity rate decreased 89 percent from the 1940 rates.

The average days of disability per temporary injury, as given in table 8, shows 11 days for underground mines, 23 for open quarries, and 22 for combined records of both mines and quarries, which are the lowest since 1934.

Accidents due to falls of persons, haulage, handling materials or objects, and machinery caused 49 percent of the 106 classified injuries. These four causes also resulted in 54 percent of all classified injuries in 1940. Of the 30,142 days of disability in 1941, 26 percent were due to haulage, 25 per cent to machinery, and 22 percent to explosives. Accidents causing the greatest number of days of disability in 1940 were falls of persons, machinery, and hand tools.

Tables 1 and 2 show the relative standing of plants enrolled in the contest arranged according to their accident-severity rates. When two or more plants have accident-free records, the contest rules provide that the number of man-hours worked governs the order. Tables 3 and 4 show yearly summary figures for all enrolled plants from 1926 to 1941, and for Association members for 1925, the year before the contests were organized. Table 5 shows a yearly summary covering both open quarries and underground mines that were enrolled in the contests. Tables 6 and 7 show the number of injuries by causes and the days of disability by causes of injuries in 1941. Table 8 shows the average days of disability for temporary injuries at mines and quarries enrolled in the contests.

TABLE 8

AVERAGE DAYS OF DISABILITY PER TEMPORARY INJURY AT PLANTS ENROLLED IN THE NATIONAL CRUSHED STONE ASSOCIATION SAFETY COMPETITION

Year	Underground mines			Open quarries			Total		
	No. of temporary injuries	No. of days of disability	Av. days of disability	No. of temporary injuries	No. of days of disability	Av. days of disability	No. of temporary injuries	No. of days of disability	Ave. days of disability
1925	29	228	8	292	5,286	18	321	5,514	17
1926	34	533	16	207	4,239	20	241	4,772	20
1927	14	68	5	458	7,186	16	472	7,254	15
1928	68	888	13	322	5,493	17	390	6,381	16
1929	30	617	21	286	5,533	19	316	6,150	19
1930	15	468	31	227	3,671	16	242	4,139	17
1931	4	147	37	198	3,540	18	202	3,687	18
1932	6	165	28	75	2,481	33	81	2,646	33
1933	11	349	32	67	2,893	43	78	3,242	42
1934	13	287	22	106	1,873	18	119	2,160	18
1935	3	249	83	77	3,015	39	80	3,264	41
1936	7	117	17	182	4,590	25	189	4,707	25
1937	3	91	30	136	4,461	33	139	4,552	33
1938	2	133	67	76	3,184	42	78	3,317	43
1939	7	457	65	51	1,678	33	58	2,135	37
1940	8	888	111	78	3,013	39	86	3,901	45
1941	15	169	11	98	2,266	23	113	2,435	22
Total	269	5,854	22	2,936	64,402	22	3,205	70,256	22

Be sure to enter your plants in the National Crushed Stone Association Safety Contest for 1943

What Can I Do?[1]

EVER since that Sunday morning when havoc swooped from the skies upon Honolulu, a new question has been churning about in millions of American minds. It is this: What can I do to help my country win this war?

This insistent question has pushed aside all matters of personal interest. From now on, individual wants and wishes must give way to the paramount needs of the nation. We all accept that. We have undertaken a huge job. Or, I should say, we have had a huge job thrust upon us. And unless we see that job through successfully it won't much matter what any of us may want.

That job is to win this war.

No longer are we trying to prepare for a war that we may get into. Today we are trying to win a war we're already in—and in up to our eyes. Nothing that any one of us now can do to help himself can get him very much if it does not also help our country to win this war.

I am sure that those who read these words will find many things to do. Some will enlist in the armed services. Some will become active in civilian defense. Some will labor to relieve distress in their home towns. Some will work with organizations set up to serve the men at the front. Each can and will find something he can do.

But this insistent question "What can I do?" goes beyond the individual and his personal service. It rechoes through the offices and the shops of every American business concern. And what I have to say here is not directed toward individual effort. Rather is it intended for the men and women of American industry who make that industry a living part of American life. Today they are asking themselves: What can industry do? Or better still, what *must* industry do if our country is to finish the job it has started?

Those of us who work in and with American industry have one supreme obligation. We may feel very patriotic; we may be willing to serve "in any capacity;" we may be willing to sacrifice . . . if necessary. But if we fail to meet that one obligation, we shall fail our country in its time of need.

That supreme obligation is an honest day's work, every day, from every man, every woman, every machine. . . .

It is as simple as that!

And that goes for all of us, whether we are engaged in civilian production or working directly on the weapons of war. American victory can be won only through the productivity of American industry.

Efficiency in production is not the responsibility of a few. It can be achieved only as we all put to useful purpose every minute of our time, every ounce of our energy, and every pound of our materials.

This responsibility of industry is the more vital because of what has happened to the business of making war. There was a time when success in war was chiefly a matter of well-trained, well-disciplined armies and competent leaders—when men were everything. In those days, military strength was a matter of strong battalions and able generals. Both still are vital. But today military might is essentially mechanical might. Modern war is an industry just as much as a factory or a railroad. In the first World War, mechanical equipment was relatively simple and limited. But today the special equipment of war and the expert skill needed to use it spell the difference between victory and defeat.

We Americans are not expert war-makers. That is why we must expect to suffer grievous losses before we can win substantial gains. We do not have military training and experience ready to hand when we need them. Neither do we have, ready for action, enough of the machines that are so essential to modern warfare.

So, when it becomes necessary to fight for our lives, we must start from scratch. And today, after a year's effort, we still are not ready to trade blow for blow with enemies who for years have schooled their leaders, trained and disciplined their people, and organized their industries to make war. We shall need more time to develop our strength. And while we are doing that, we must expect reverses.

But there is a brighter side to all this. For it follows that if we are granted this all-important time, the change in the method of warfare is right down our alley. The greater importance of mechanized equipment plays straight into the hand of the world's greatest industrial nation . . . if there is one thing America *does* know, it is industrial production! Our industries know how to produce. They have the skilled manpower. They have the organized facilities. Beyond any doubt, we can produce all that we need to win the victory that we *must* win—if only we are given the time.

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[1] From an editorial by James H. McGraw, Jr., President, McGraw-Hill Publishing Co., which appeared in the Jan. 1, 1942 issue of *Engineering News-Record*.

The first responsibility of the armed forces is to gain that time for us.

The first responsibility of industry is to use to the full every second of that time in producing the weapons the armed forces need to win the ultimate victory. Industrial production is the key to victory. But it must be bigger production and faster production than we ever have known.

Heretofore American industry has worked to produce more of those things which make our lives more enjoyable. Today it must divert much of its energy from the products of peace to the weapons of war.

This change sets up a new yardstick of industrial performance. In time of peace we measure production efficiency in terms of money saved. From now on, we must measure efficiency chiefly in terms of time saved. For the plane, the tank, the gun, or the ship that is ready when it is needed to win a victory, is worth a million times more than the one that is delivered too late to avert a defeat.

Everyone knows how short we are of some materials and machines. But our most tragic shortage is the shortage of time. So whatever we may waste in the days ahead—and unhappily we are bound to waste plenty—let us never forget that the most deadly waste of all is the waste of time.

Time wasted never can be replaced. No one ever has discovered a substitute for time. If we would avoid the waste of this irreplaceable ingredient of victory, we must use every minute of it effectively—*while we still have it.*

That goes for us all. It goes for the man or the woman at the bench, at the desk, at the counter, in the field, or in the executive office. It goes for the politician as well as for the business man. It goes for the humblest and the most powerful. A nation at war cannot carry deadheads. It cannot spare a square foot for any one who will not pull his weight.

In this war, nothing short of complete victory can save the liberties of us all, rich and poor, employer and employee, haves and have-nots alike. The price of that victory is the labor, the loyalty, and the devotion of every last one of us. Winston Churchill said it well for the British people. You know how he said it. I need not repeat it.

All this imposes upon American industry, its owners, its managers, and its workers, the gravest responsibility they ever have assumed. If our country is to survive as a free nation, American industry must rise to that responsibility. If our country should fall, it would fall because American industry fell short of the need. It would be another case of "too little and too late."

This grave responsibility calls for the keenest management industry ever has known. It calls for unremitting research to make the most of our resources. It calls for the reduction of waste to a record minimum: that goes for waste of time, labor, and material. It calls for keeping our machinery working as near to full capacity as we can contrive. It calls for the highest rates of unit production we ever have known. That will mean skillful coordination by management and the most intelligent cooperation that the men in the shops can give. It calls for inventive ingenuity to match that of a nation which has produced some of the world's outstanding technical genius. For this is a war of technical pro ficiency.

But above all, it calls for a new devotion to the day's work. For so long as we are at war, the day's work will determine our country's security.

Whatever may be our material resources and our technical skill, however resourceful our management, however broad the scale of our effort, industry cannot measure up to its prodigious responsibility if any of us shirk the day's work. Right there is where we find the *one* thing we *all* can do—the one thing that is within the power of each of us.

That one thing is simply to deliver an honest day's work wherever we are called to serve. Honest work will win this war. Loafing will lose it. The showdown will be whether Hitler can drive his people to work harder than we are willing to work. There is no one to drive us. We must drive ourselves!

Is that so much to ask? It is all our country asks of us, the men of industry. It is all that the men who must work the guns and tanks in the field ask of us. It is all that the men who work our ships and our planes ask of us. "Give us the planes, the guns, the ships, the tanks, and all the rest of our tools," they tell us, "and we'll give you the victory that means so much to us all. But, in the name of that victory, give them to us quickly—QUICKLY—QUICKLY!"

Is that, I repeat, too much to ask of us?

WPB Organizes Campaign for Scrap Collection

(*Continued from page 12*)

gets it. . . . There is no possibility of over-emphasizing the importance of this job. This war is being fought with metals. When we have done everything we can to increase our ability to get the ores out of the ground, we shall still fall short unless we get the scrap metal to the furnaces also."

Super-Highways Proposals Revived

REVIVAL of proposals to build super-highways as a means of unemployment relief are being heard in Congress again. Representative Wene (D., N. J.) has introduced House Bill 7601 to provide for construction and operation by the Federal Government of a system of new military super-highways for national defense in time of war for governmental and commercial use in time of peace. The bill would provide for financing of these highways to relieve unemployment and to stimulate general business and to earn revenue for the Federal Government after the end of the present world war.

WPB Revokes Priority Assistance to Non-Military Construction for Federal Government

DONALD M. NELSON, Chairman of the War Production Board, recently notified heads of eight governmental agencies that he has given instructions to revoke priority assistance to a large part of non-military construction for the Federal Government.

Exceptions are made only insofar as such construction is directly essential to the war effort. At the same time a review of all military projects, of the Army, Navy and Maritime Commission, with the same end in view, is being made.

"As things now stand," Mr. Nelson said, "facilities and construction, including many projects not related to the war effort, programmed for 1943, with the carry-over of uncompleted 1942 projects will absorb between one-fifth and one-fourth of the total war effort.

"As a result," he continued, "the aggregate demand of such projects for materials, labor, transportation, manpower, and technical and engineering services is so great as not only to jeopardize the various military and essential civilian production programs in general, but to force the most essential war projects dangerously behind schedule.

"I refer particularly to the rubber program, the high-octane gasoline program, the aluminum and steel expansion programs, the aviation program, and other like items of the most critical essentiality.

"We cannot afford to continue to expend our substance in these times otherwise than in support of the war effort, and so it is obvious that the vast amounts of material and labor being currently expended in the present large public and private construction programs must be diverted into channels which will contribute directly to winning the war.

"In this connection, I am concerned not only with civilian but with military construction as well, which, with the concurrence of the Under Secretaries of War and the Navy, is also to be reviewed and restricted in the light of its essentiality under present conditions.

"Experience has indicated that this situation cannot be effectively controlled merely through granting low priority ratings. Unessential projects must be stopped. Accordingly, I have given instructions that priority assistance be revoked and appropriate action be taken with respect to virtually all non-military construction for the Federal Government, except insofar as it is directly essential to the future of the war effort, and have instructed that a review be made of all military projects as well with the same end in view.

"Knowing the mutuality of your own and my interest in these objectives I bespeak your full cooperation in the accomplishment of this difficult task."

Letters to the agency heads differed in some specific respects, but each followed the same pattern. Agencies addressed were the War Department, Navy Department, Maritime Commission, Department of Commerce, Department of the Interior, Department of Agriculture, Federal Works Agency and the Tennessee Valley Authority.

The contemplated construction program for 1942 and 1943—including building, equipment and machinery—is estimated at approximately $33.8 billion. Of this amount about $17.8 billion is scheduled for completion in 1942, with about $16 billion contemplated for 1943. It is in the latter volume that most of the reductions ordered by Mr. Nelson must be made.

During the first eight months of this year about $11 billion of construction was completed. The volume in August, the latest month for which figures are complete, was $1.8 billion—an annual rate of nearly $22 billion.

A present reduction in Government construction to make way for war production does not mean that such projects are to be permanently dropped. On the contrary, there will be special need for many such public works in the period following the end of the war to help take up the shock of reverting to peacetime economy. Works now deferred because of the war can with benefit be resumed at that time.

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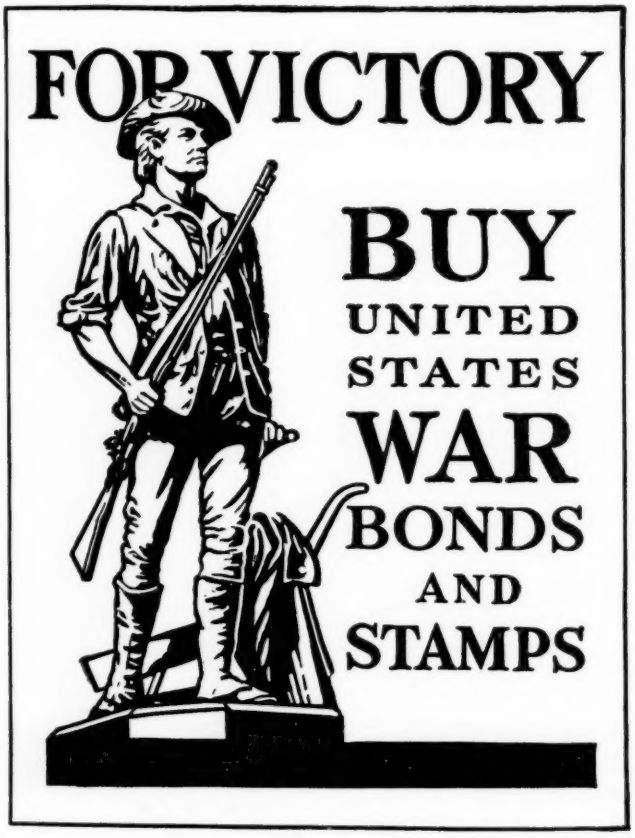

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